

4634/0J079 09/807128

TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)

JC07 Rec'd PCT/PTO 05 APR 2001

INTERNATIONAL APPLICATION NO.  
PCT/ZA99/00106INTERNATIONAL FILING DATE  
5 October 1999PRIORITY DATE CLAIMED  
5 October 1998

## TITLE OF INVENTION

**CAMERA SYSTEM REMOTELY CONTROLLED OVER A COMMUNICATION NETWORK**

APPLICANT(S) FOR DO/EO/US

**COHEN, Lance Farrel**

Applicant herewith submits to the United States Designated/Elected office (DO/EO/US) the following items and other information:

1.  This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2.  This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S. C. 371.
3.  This is an express request to begin national examination procedures (35 U.S.C. 371 (f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S. C. 371 (b) and PCT Articles 22 and 39 (1).
4.  A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5.  A copy of the International Application as filed (35 U.S. C. 371 (c) (2) )
  - a.  is transmitted herewith (required only if not transmitted by the International Bureau).
  - b.  has been transmitted by the International Bureau
  - c.  is not required, as the application was filed in the United States Receiving Office (RO/US)
6.  A translation of the International Application into English (35 U.S. C. 371 (c)2)).
7.  Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
  - a.  are transmitted herewith (required only if not transmitted by the International Bureau).
  - b.  have been transmitted by the International Bureau.
  - c.  have not been made; however, the time limit for making such amendments has NOT expired.
  - d.  have not been made and will not be made.
8.  A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c) (3)).
9.  An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10.  A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).

**Items 11. to 16. below concern other document(s) or information included:**

11.  An Information Disclosure Statement under 37 CFR 1.97 and 1.98 (with references).
12.  An assignment document for recording. A **separate** cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13.  A **FIRST** preliminary amendment.
  - A **SECOND** or **SUBSEQUENT** preliminary amendment.
14.  A substitute specification.
15.  A change of power of attorney an/or address letter.
16.  Other items or information:

**EXPRESS MAIL CERTIFICATE**

Date 4-5-01 Label No. EL853598707-48  
 I hereby certify that, on the date indicated above, this paper or  
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 to Addressee" service.

Name (Print) G. Karasz

Signature G. Karasz



07278

PATENT TRADEMARK OFFICE

U.S. APPLICATION NO. (if known see 37 C.F.R. 1.52)	INTERNATIONAL APPLICATION NO.: PCT/ZA99/00106	Attorney's Docket Number 4634/0J079		
17. [x] The following fees are submitted:		ALCULATIONS PTO USE ONLY		
Basic National Fee (37 CFR 1.492 (a)(1)-(5)): Search Report has been prepared by the EPO [] or JPO []		\$860.00		
International preliminary examination fee paid to USPTO (37 CFR 1.482) .....		\$690.00		
No international preliminary examination fee paid to USPTO(37 CFR 4.482) but international search fee paid to USPTO (37 CFR 1.445 (a) (2)...)		\$710.00		
Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....		\$1,000.00		
International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4).....		\$100.00		
ENTER APPROPRIATE BASIC FEE AMOUNT =		\$1,000.00		
Surcharge of \$130.00 for furnishing the oath or declaration later than []20 []30 months from the earliest claimed priority date (37 CFR 1.492(e)).		\$		
Claims	Number Filed	Number Extra	Rate	
Total Claims	13-20	0	0 X \$18.00	\$0
Independent Claims	2-3	0	0 X \$80.00	\$0
Multiple dependent claims(s) (if applicable)		+ 270		\$0
		TOTAL OF ABOVE CALCULATIONS =	\$1,000.00	
Reduction by 1/2 for filing by small entity, if applicable.			\$	
		SUBTOTAL =	\$0	
Processing fee of \$130.00 for furnishing the English translation later the [] 20 [] 39 months from the earliest claimed priority date (37 CFR 1.492(f)).		+	\$	
		TOTAL NATIONAL FEE =	\$	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). the assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property		+	\$	
		TOTAL FEES ENCLOSED =	\$1,000.00	
		Amount to be refunded	\$	
		charged	\$	
<p>a. [X] A check in the amount of <u>\$1,000.00</u> to cover the above fees is enclosed.</p> <p>b. [] Please charge my Deposit Account No.04-0100 in the amount of \$ to cover the above fees.</p> <p>c. [X] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 04-0100. A duplicate copy of this sheet is enclosed.</p>				
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.				
SEND ALL CORRESPONDENCE TO Joseph B. Lerch Darby & Darby P.C. 805 Third Avenue New York, New York 10022-7513				
SIGNATURE 				
NAME Joseph B. Lerch				
REGISTRATION NO. 26,936				



09/807128

JC08 Rec'd PCT/PTO 05 APR 2001

EXPRESS MAIL CERTIFICATE  
**07278**

PATENT TRADEMARK OFFICE

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4634/0J079

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Lance Farrel COHEN

Filed: CONCURRENTLY

For: CAMERA SYSTEM REMOTELY CONTROLLED OVER A COMMUNICATION  
NETOWRKPRELIMINARY AMENDMENTHon. Commissioner of  
Patents and Trademarks  
Washington, DC 20231

Sir:

Prior to examining the above-identified patent application, please  
enter the following amendment(s):

In the Claims:

Please amend Claims 3-4 to read as follows:

3. (Amended) A communication system as claimed in claim 2 [any one of the preceding claims] in which azimuth and elevation of the camera are electronically controllable through voice instructions transmitted from the first audio communication device.

4. (Amended) A communication system as claimed in claim 3 [any one of the preceding claims] in which the audio communication devices provide at least a one-way voice communication link from the first audio communication device to the second audio communication device.

Please add the following new Claims 7-13

7. A communication system as claimed in claim1 in which azimuth and elevation of the camera are electronically controllable through voice instructions transmitted from the first audio communication device.

8. A communication system as claimed in claim 7 in which the audio communication devices provide at least a one-way voice communication link from the first audio communication device to the second audio communication device.

9. A communication system as claimed in claim 8 [4] in which at least the second audio communication device includes a headset having a loudspeaker.
10. A communication system as claimed in claim 2 which the audio communication devices provide at least a one-way voice communication link from the first audio communication device to the second audio communication device.
11. A communication system as claimed in claim 10 [4] in which at least the second audio communication device includes a headset having a loudspeaker.
12. A communication system as claimed in claim 1 in which the audio communication devices provide at least a one-way voice communication link from the first audio communication device to the second audio communication device.
13. A communication system as claimed in claim 12 [4] in which at least the second audio communication device includes a headset having a loudspeaker.

## R E M A R K S

This patent application includes Claims 1-13. The claims have been amended to eliminate multiple dependencies. New claims have been added to restore some of the dependencies eliminated by deleting multiple dependencies.

Respectfully submitted,



Joseph B. Lerch  
Reg. No. 26,936  
Attorney for Applicant(s)

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CAMERA SYSTEM REMOTELY CONTROLLED OVER A COMMUNICATION  
NETWORK

- 1 -

COMMUNICATION SYSTEM

FIELD OF THE INVENTION

This invention relates to a communication system and more particularly, but not exclusively, to a visual and audio communication system.

BACKGROUND TO THE INVENTION

It is often necessary to inspect a site such as a building site, a factory, or any other dwelling.

- 5 Where such a site is located at a remote location, on-site inspections can be very time consuming and expensive.

OBJECT OF THE INVENTION

It is the object of this invention to provide a communication system which, at least partially, alleviates some of the abovementioned difficulties.

**SUMMARY OF THE INVENTION**

In accordance with this invention there is provided a communication system comprising a video camera connectable to a portable wireless transceiver for transmitting a video signal from the video camera to a signal repeater from where the video signal is transmitted over a communication system to a second transceiver arranged to display the video signal on a display means, and a first control device connectable to the second transceiver for transmitting a control signal over the telephony communication system to the signal repeater and from the signal repeater to the portable wireless transceiver and to a second control device connected to the portable transceiver.

A further feature of the invention provides for the communication system to be a telephony communication system.

There is further provided for the first and second control devices to be audio communication devices.

There is alternatively provided for the first control device to electronically control the video camera and to at least control the azimuth and elevation of the video camera.

A still further feature of the invention provides for the signal repeater to be located in an aeroplane for relaying video and/or control signals between a remote site and a base station.

A further feature of the invention provides for the first audio communication device to be a microphone and for the second audio communication device to be a loudspeaker or vice versa; alternatively, for both the first and second communication devices to have a microphone and a loudspeaker each to allow for two way audio communication.

There is provided for the telephony communication system to be land based telephone lines; alternatively, for the telephony communications system to be a cellular telephony communication system; further alternatively for the telephony communication device to be a satellite telephony system.

There is further provided for the microphone of the second communication device to be a microphone of the video camera.

This invention extends to a method of inspecting a remote site comprising the steps of connecting a video camera and at least a loudspeaker to a portable wireless transceiver, connecting a signal repeater at a remote site to a telephony communication system, connecting a second transceiver at a base station to the telephony communication system, connecting a display means to the transceiver and connecting a microphone to the second transceiver, displaying a video signal from the video camera at the remote site on the display means and transmitting a control signal from the first control device to the second control device.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

Preferred embodiments of the invention is described below by way of example only and with reference to the accompanying drawings in which :

Figure 1 shows a schematic representation of a first embodiment of a communication system; and

Figure 2 shows a schematic representation of a second embodiment of a communication system.

### **DETAILED DESCRIPTION WITH REFERENCE TO THE DRAWINGS**

With reference to the drawings, in which like numerals refer to like features, a communication system is generally indicated by reference numeral (1).

The communication system consists of a video camera (2), a first and second control devices (8) and (9), a portable wireless transceiver (3), a signal repeater (4), a telephony communication system (5), a second transceiver (6) and a display means (7).

In this embodiment the display means (7) is a computer screen. The first and second control devices (8) and (9) are audio communication devices which consists of headsets with a microphone each and each having a loudspeaker.

The video camera (2) and second audio communication device or second headset (9) is connected to the portable wireless transceiver (3) for use at a remote location (10).

The signal repeater (4) is connected to the telephony communication system (5) at the remote location (10).

5 The second transceiver (6) is connected at a base station (11) to the telephony communication system (5) to allow for communication between the remote location (10) and the base station (11).

10 The first audio communication device or first headset (8) and the display means (7) is connected to the second transceiver (6).

15 In use, the video camera (2) transmits a video signal to the portable wireless transceiver (3) which then transmits the video signal to the signal repeater (4). The signal repeater (4) receives the video signal and transmits it over the telephony communication system (5) to the second transceiver (6). The second transceiver (6) now causes the video signal to be displayed on the computer screen (7).

20 A voice signal is also transmitted from the first headset (8) to the second transceiver (6) which then transmits the voice signal over the telephony communication system (5) to the signal repeater (4). From the signal repeater (4), the voice signal is transmitted to the portable wireless receiver (3) and to the second headset (9).

25 In this way a camera operator at the remote location (10) can transmit video images of the remote location (10) to the base station (11). A person at the base station (11) can transmit verbal instructions to the camera operator at the remote location (10). Any remote location can thus be inspected by a person at a base station. This obviates the need for such a person to be physically present at the remote location to conduct an inspection.

30 A two way voice communication link can also be established between the camera operator and the person at the base station (11). In this case a voice signal can also be transmitted from the second headset (9) to the first headset (8) through the communication system (1). It will be appreciated that only a one way voice communication link as described above would be necessary to instruct the camera operator.

5       The camera does not have to be operated by a human operator. The camera may be mounted on an adjustable mounting means at a site to be inspected. An electronic control signal from the first control device which may be a computer may then control the view direction, ie panning and tilt, of the camera and other functions of the camera itself. The camera may also be mounted such that the direction in which it points does not have to be changed or cannot be changed. Camera functions only may then be controllable from a base station.

10      The telephony communication system used may be based on land telephone lines, cellular telephone systems or satellite telephone systems as is known in the art.

15      While the camera (2) transmits images to the base station (11), the same images may be recorded on a video cassette inserted in the camera. A camera using a digital video disk or the like may also be used.

20      Figure 2 shows a second embodiment of a communication system. In this embodiment, a second portable display means (12) is connected to the first transceiver (3).

25      A wireless connection is established between the second transceiver (6) and a third transceiver (13). The display means (7) and the second control device (8) are now connected to the third transceiver (13). In this embodiment, the display means (7) is a portable display means. A second video camera (14) is also connected to the third transceiver (13). The communication system shown in figure 2, in effect replaces the components of the base station (11) of figure 1 with the components of the remote location (10) of figure 1. The display means (7) is now portable and a similar portable display means is connected to the first transceiver (3) of the remote location (10) of figure 1.

30      The remote location (10) and base station (11) are no longer clearly distinguishable and any end of the communication system of figure 2 can act as either a base station or a remote location. A operator at one end can view what the operator at the other end is filming and vice versa.

35      Other non-portable display means (15) can be connected as shown to show images being shot by any one of the video cameras. Recording means (16) may also be used to record images and/or control signals and/or voice signals on magnetic tape or on any other convenient recording media.

As shown in figure 2, a series of first (3) and third (13) transceivers each having a camera (2) and (14), a portable display (12) and (7) and a headset (9) and (8) connected thereto, are employed.

- Other electronic control means may replace the headsets (9) and (8) to electronically control azimuth and elevation of a camera, zoom function of a camera or any other controllable function of a camera.
- 5.

**CLAIMS**

1. A communication system comprising a video camera connectable to a portable wireless transceiver for transmitting a video signal from the video camera to a signal repeater, from which the video signal is transmitted over a telephony communication system to a second transceiver arranged to receive the video signal and to display it on a display means, and a first control device connectable to the second transceiver for transmitting a control signal over the telephony communication system to the signal repeater and from the signal repeater to the portable wireless transceiver and to a second control device connected to the portable transceiver.
2. A communication system as claimed in claim 1 in which the video camera is electronically controllable by the first control device.
3. A communication system as claimed in any one of the preceding claims in which azimuth and elevation of the video camera are electronically controllable by the first control device.
4. A communication system as claimed in claim 1 in which the first and second control devices are audio communication devices.
5. A communication system as claimed in claim 4 in which the audio communication devices provide at least a one way voice communication link from the first control device to the second control device.
6. A communication system as claimed in any one of the claims 4 or 5 in which at least the second control device includes a headset having a loudspeaker.

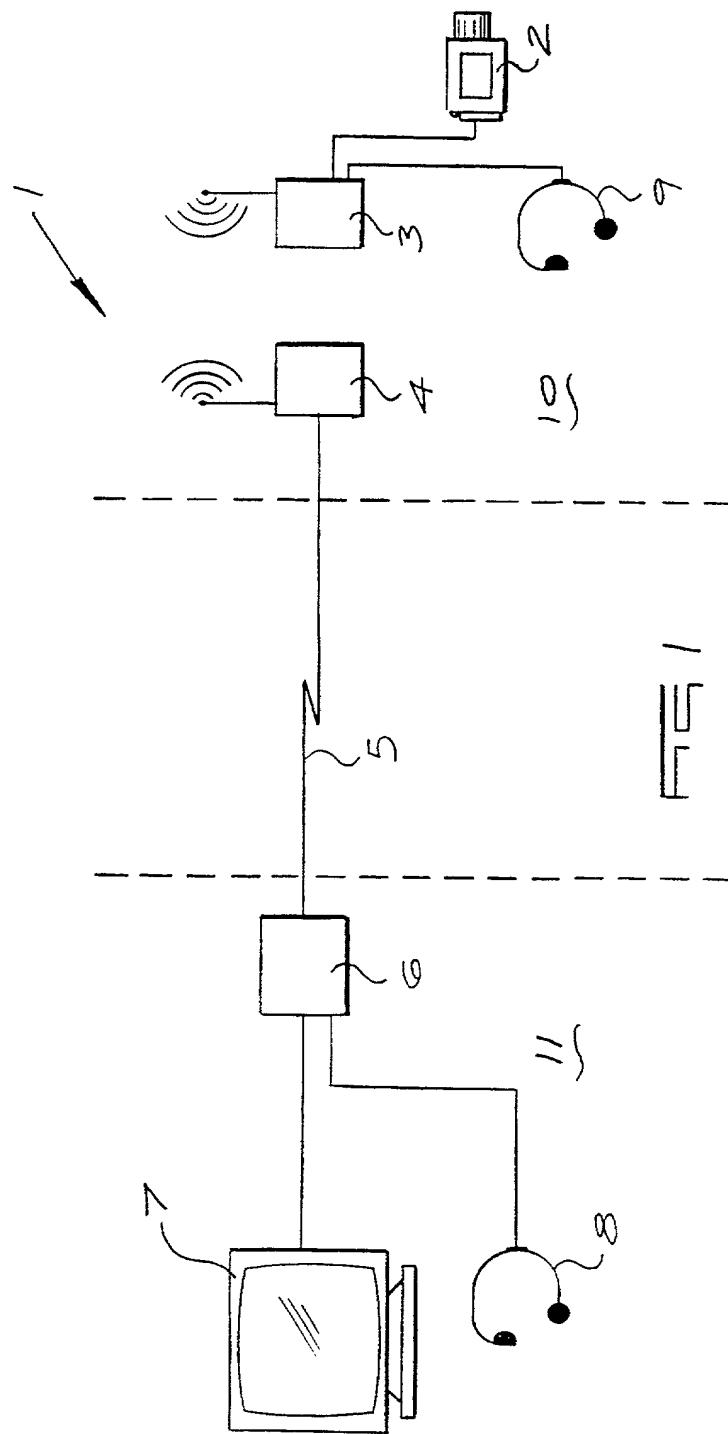
- 5
- 10
- 15
7. A method of inspecting a remote site with a communication system comprising the steps of connecting a video camera and a second control device to a portable wireless transceiver at the remote site, connecting a signal repeater at the remote site to a telephony communication system, connecting a second transceiver at a base station to the telephony communication system, connecting a display means to the second transceiver and connecting a first control device to the second transceiver, displaying a video signal from the video camera at the remote site on the display means and transmitting a control signal from the first control device over the telephony communication system to the signal repeater and to the second control device connected to the wireless transceiver.
8. The method as claimed in claim 7 in which the first and second control devices are used to electronically control the video camera.
9. The method as claimed in claim 7 in which the first and second control devices are audio communication devices.

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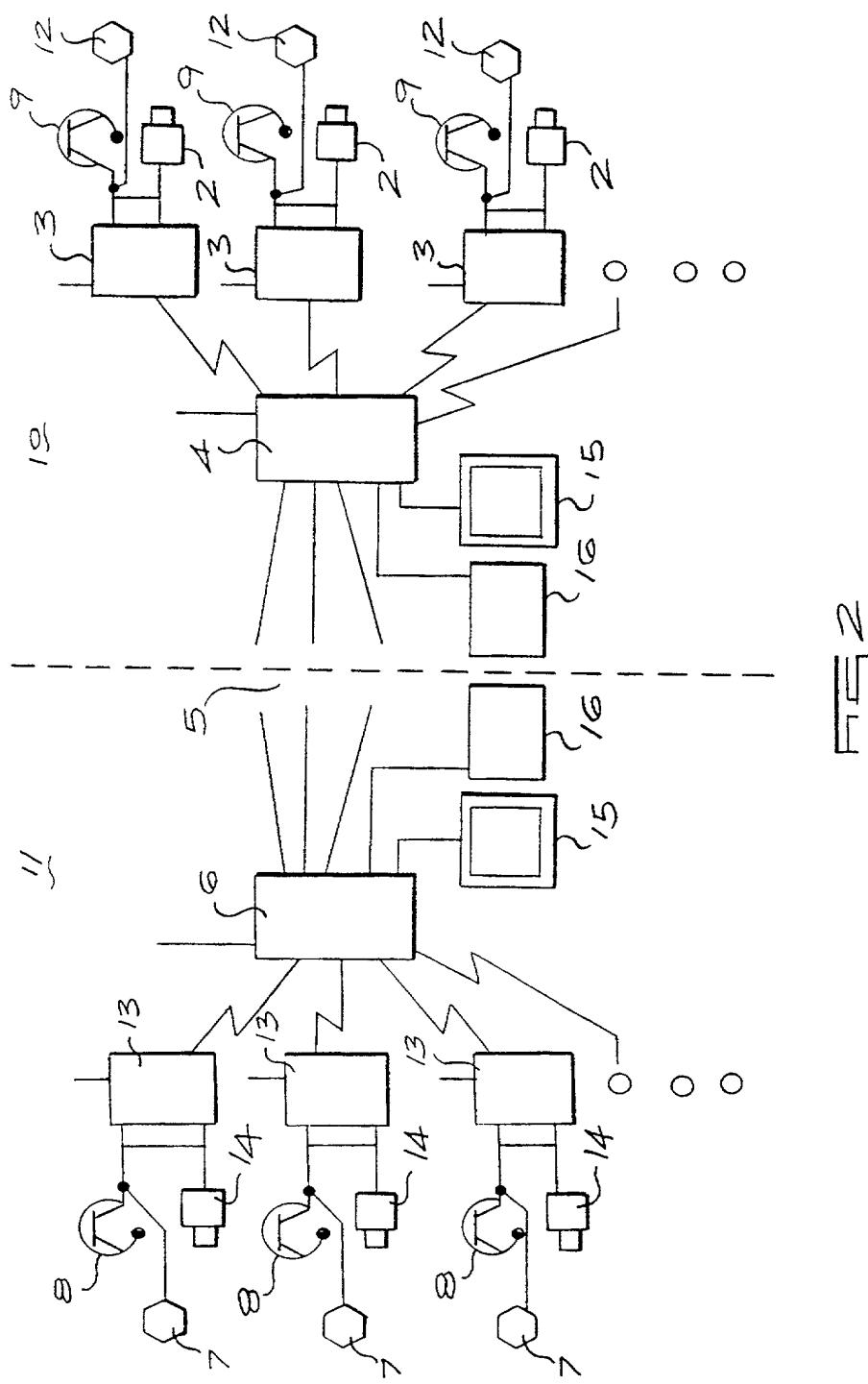
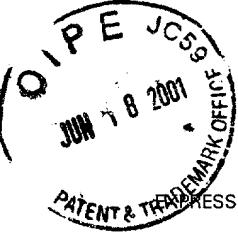


FIG 2



06-19-01

PCT JK

JC03 Rec'd PCT/PTC 18 JUN 2001

09/807128

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Signature

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07278

PATENT TRADEMARK OFFICE

Docket No.: 4634/0J079

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Lance Farrel Cohen

Serial No.: 09/807,128 Art Unit:

Confirmation No.:

Filed: April 5, 2001 Examiner:

For: CAMERA SYSTEM REMOTELY CONTROLLED OVER A  
COMMUNICATION NETWORK

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01 FEE PAID 130.00 0P

Assistant Commissioner for Patents  
Washington, DC 20231  
Attn: Box PCT  
RO/US

Sir:

COMPLETION OF PATENT APPLICATION

The following items are submitted herewith in completion of the above-identified patent application:

1. Declaration and power of attorney
2. Payment in the amount of \$ 130 for late filing of Declaration  
in the form of: ..



# APPLICATION FOR UNITED STATES PATENT DECLARATION FOR PATENT APPLICATION

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on

(1) the invention entitled **CAMERA SYSTEM REMOTELY CONTROLLED OVER A COMMUNICATION NETWORK**

the specification of which

(2) (file no. \_\_\_\_\_)

(check at least one)

(3) [ ] is attached hereto.

(4) [X] was filed on 05/04/2001 as Application Serial No. 09/807,128

(6) and was amended on \_\_\_\_\_  
(if applicable)

Use this portion  
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International  
Application  
designating  
the U.S.

(7) [X] was filed as PCT international application

(8) Number PCT/ZA99/00106

(9) on 5 October 1999

(10) and was amended under PCT Article 19

(11) on \_\_\_\_\_  
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me which is material to patentability in accordance with Title 37, Code of Federal Regulations, s 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code s 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date earlier than that of the application(s) on which priority is claimed:

## (12) Prior (Foreign) Application(s) any Priority Claims Under 35 U.S.C. 119

## Priority Claimed

ZA (Country)	98/9041 (Number)	5 OCTOBER 1998 (Day/Month/Year Filed)	[X] YES	[ ] NO
(Country)	(Number)	(Day/Month/Year Filed)	[ ] YES	[ ] NO
(Country)	(Number)	(Day/Month/Year Filed)	[ ] YES	[ ] NO

(13)

## TO BE USED ONLY FOR CONTINUING APPLICATION

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is the U.S. National  
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(U.S. Application Number)	(U.S. Filing Date)	Status (patented, pending, abandoned)
(U.S. Application Number)	(U.S. Filing Date)	Status (patented, pending, abandoned)

I hereby appoint the following partners of the firm of **DARBY & DARBY** as my attorneys of record with full power of substitution and revocation to prosecute this application and to transact all business in the Patent and Trademark Office:

I hereby appoint as principal attorneys: Morris Nelson, (15,108), Gordon D. Coplein, (19,165), William F. Dudine, Jr., (20,569), Michael J. Sweedler, (19,937), David R. Francescani, (25,159), S. Peter Ludwig, (25,351), Joseph B. Lerch, (26,934):

See page 2 for signature lines

7

ALL CORRESPONDENCE IN CONNECTION WITH THIS APPLICATION SHOULD BE SENT TO:

DARBY & DARBY P.C.

805 Third Avenue

New York, N.Y. 10022

United States of America

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

*14a	Typewritten Full Name of Sole or First Inventor	<u>LANCE</u>	F	<u>COHEN</u>
	Given Name	Middle Initial	Family Name	
*15a	Inventor's Signature	<u>Lance</u>	<u>T.</u>	<u>Cohen</u>
*16a	Date of Signature	<u>05</u>	<u>08</u>	<u>2001</u>
17a	Residence	<u>SANDTON</u>	<u>GAUTENG</u>	<u>REPUBLIC OF SOUTH AFRICA</u>
	City	State or Province	Country	
18a	Citizenship	<u>SOUTH AFRICAN</u>		
19a	Post Office Address (Insert complete mailing address, including country)	<u>1 HOLLY HOCK ROAD, BENMORE GARDENS EXT 3, SANDTON 2196,</u>		
		<u>GAUTENG, REPUBLIC OF SOUTH AFRICA</u>		
*14b	Typewritten Full Name of Second Joint Inventor	Given Name	Middle Initial	Family Name
*15b	Inventor's Signature			
*16b	Date of Signature		Month	Day
17b	Residence	City	State or Province	Country
18b	Citizenship			
19b	Post Office Address (Insert complete mailing address, including country)			
*14c	Typewritten Full Name of Third Joint Inventor	Given Name	Middle Initial	Family Name
*15c	Inventor's Signature			
*16c	Date of Signature		Month	Day
17c	Residence	City	State or Province	Country
18c	Citizenship			
19c	Post Office Address (Insert complete mailing address, including country)			
*14d	Typewritten Full Name of Fourth Inventor	Given Name	Middle Initial	Family Name
*15d	Inventor's Signature			
*16d	Date of Signature		Month	Day
17d	Residence	City	State or Province	Country
18d	Citizenship			
19d	Post Office Address (Insert complete mailing address, including country)			

\* Note to Inventor: Please sign name on line 15 exactly as it appears in line 14 and insert the actual date of signing on line 16. If there are more than four inventors please add a copy of this page for identification and signatures of the additional inventors.